

# XRD: X-ray diffraction

X-ray diffraction is analytical method based on inspection of crystalline structure of samples. Applications:

- Metallurgy, Mineralogy
- Powders, Pigments, Polymers
- Surface layers
- Strain mapping

## DETECTOR IS A KEY

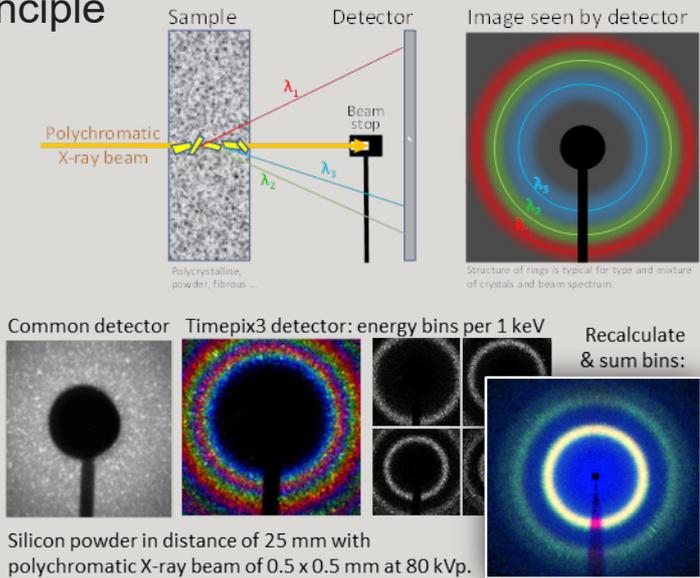
The traditional XRD uses monochromatic X-rays which make the apparatus large and slow. ADVACAM's spectral camera based on Timepix3 chip with high resolution makes it fast and compact:

The high resolution detector can be placed close to the sample covering large solid angle → fast data accumulation.

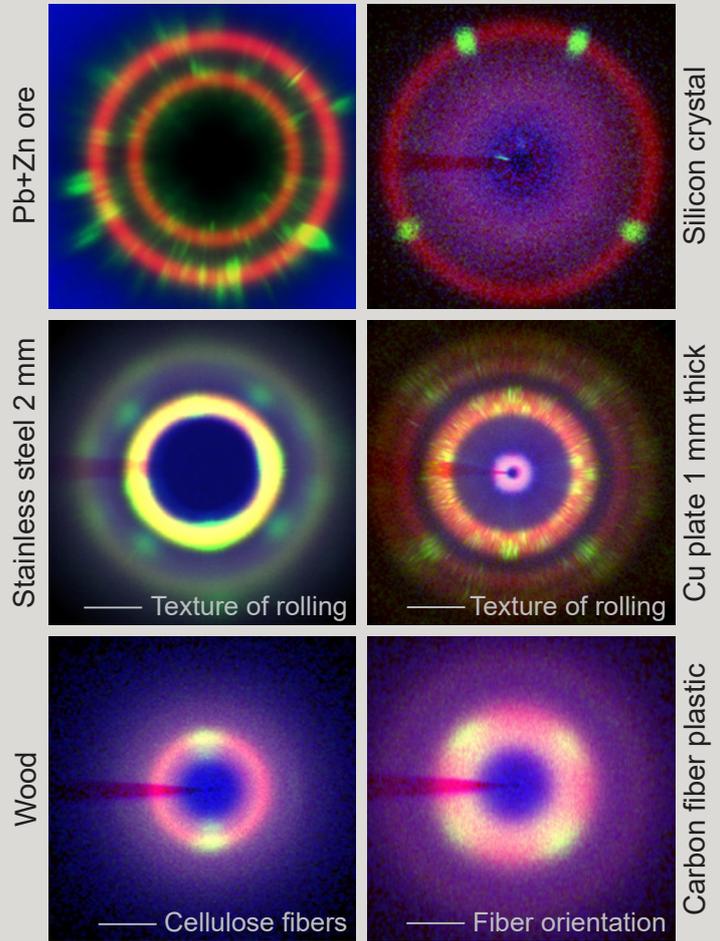
The polychromatic X-ray beam can be used with ADVACAM's energy dispersive detectors → system is faster, smaller, much less complex.

Broad energy range (3 - 150 keV): Even heavy samples can be transmitted (stainless steel, heavy metals and minerals).

## Principle



## Examples



## SUITABLE CAMERAS

MINIPIX<sup>®</sup>TPX3

ADVAPIX<sup>®</sup>TPX3



Readout chip type  
Sensor material  
Pixel size  
Readout speed  
Interface  
Dimensions  
Weight

Timepix 3  
Si or CdTe  
55 x 55 um  
2.35 Million hits/s  
USB 2.0 (High-Speed)  
80 x 21 x 14 mm  
30 g

Timepix 3  
Si or CdTe  
55 x 55 um  
40 Million hits/s  
USB 3.0  
125 x 79 x 25.5 mm  
503 g